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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/476,678	12/30/1999	PHILIP NORD JENKINS	499.028US1	8138

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EXAMINER

MUNOZ, GUILLERMO

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 08/12/2003

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/476,678

Applicant(s)

JENKINS ET AL.

Examiner

Guillermo Munoz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on amendment filed May 29, 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-22 and 25-42 is/are allowed.
- 6) ☒ Claim(s) 23 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 May 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Response to Arguments

Applicant's arguments filed on January 22, 2001, regarding claims 23-24, have been fully considered but they are not persuasive.

Applicant's argument—As per claims 23 and 24, the applicant argues that claims 23-24 depend, directly or indirectly, on claims 1, 11, 25, 27, 39, or 40, and are patentable over the cited references for the reasons argued for claims 1, 11, 25, 27, 39, or 40.

Examiner's response—Claim 23 is written as an independent claim and does not depend, directly or indirectly, on any independent claim of the instant application.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishibashi et al (US Patent Number 5,621,774) in view of Gervasi (US Patent Number 5,948,083).

In regards to claim 23 and 24; Ishibashi et al teaches a circuit for reducing skew between a plurality of signals transmitted with a transmit clock wherein:

- “a variable delay control circuit for controlling the delay amount of the variable delay circuits by means of output signals of the latch circuits”(col.2, lines 35-37).
- “The variable delay control circuit divides the data into n/m by means of the arrival time of data to the receiving apparatus and controls the delay times of the variable delay

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circuits so that m data can be latched by the latch circuits. The timing chart in the case of $m=n/2$ is as shown in FIG. 13. The $n/2$ received data 1 arriving early at the receiving apparatus is latched by the received clock 1 and the remaining $n/2$ received data 2 is latched by the received clock 2”(col.2, lines 57-64).

Ishibashi et al does not particularly call for a circuit wherein: “the phase comparator compares phase of an input signal to a clock signal to generate a clock early signal and a data early signal.” However, Ishibashi et al does teach that the variable delay control circuit adjust the amount of delay applied to the data signal by applying selection signals to each data line based upon the arrival time of the data with respect to the clock.

Gervasi teaches another circuit for detecting the arrival time of a data signal wherein:

- “When an input data signal is received along the input data line, it is passed on to each of the data latches. Each data latch outputs the data based upon a strobe signal received from the associated delay block. The result is oversampling the input data signal to determine whether the input data signal is early, on-time, or late”(col.2, lines 64-68 & col.3, lines 1-2).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the phase of the data signal of Ishibashi et al based upon generated early data signal and a data late signal in view of Gervasi for the purpose of reducing skew in the received data signals.

In regards to claim 24; as applied to claim 23 above, Ishibashi et al teaches a circuit for reducing skew between a plurality of signals transmitted with a transmit clock wherein:

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- “ $L_{in}(0)$ to $L_{in}(n)$ the latch circuits for latching the input data $DT(0)$ to $DT(n)$ delayed by a variable delay circuit 0 designated by $VD(0)$ to a variable delay circuit n designated by $VD(n)$ in response to the CK”(col.7, lines 38-41).

The latch circuits are equivalent to claimed plurality of flip-flops in claim 24.

Allowable Subject Matter

Claims 1-22 and 25-42 are allowed.

The following is an examiner's statement of reasons for allowance:

The present invention comprises a detection of skew between the received transmit clock and each of a plurality of received data signals. The closest prior art, Collens et al, (US Patent Number 6,031,847) shows a similar circuit including a detection of skew between a plurality of received data signals. However, Collens et al fails to teach detecting skew between a received transmit clock and each of the received data signals. The distinct features of the instant application have been included in independent claims 1, 11, 25, 27, 39, and 40 rendering them allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 703-305-4224.

The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone numbers for the

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organization where this application or proceeding is assigned are 703-872-9313 for regular communications and 703-872-9313 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-0377.



GM
August 11, 2003



STEPHEN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600